OJTRP-1987

A Guide to Consultant Research Assignments and the Ontario Joint Transportation Research Programme

Ontario Ministry of Transportation
Research and Development Branch

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1/ Introduction

The knowledge, skills, resources and facilities of universities, research agencies and consultants from private industry play an important role in research and development work undertaken to improve those aspects of transportation within the purview of the Province of Ontario.

In keeping with the research procurement policy of the Ontario Government, the Ministry both solicits proposals and welcomes unsolicited proposals for external R&D work. Following evaluation of the proposals received, contracts are entered into for accepted proposals in one of two ways which are funded on an annual basis; under the Ontario Joint Transportation Research Programme or by assignment to consultants for a project in an approved work plan.

The work is undertaken on a project-specific basis under contract. Projects cover a wide variety of subjects in the natural sciences, including engineering, and also in human and social sciences. Futher, investigations may be multidisciplinary in view of the increasing recognition of the importance of interaction between the sciences in solving overall problems. The work may be undertaken in Ontario or, if the need cannot best be met within the province, elsewhere in Canada or in other countries.

The purpose of this guide is to provide information to universities, research agencies and consultants as to the administrative, technical and financial considerations governing the submission of proposals and the subsequent execution of approved projects for external R&D work for which the R&D Branch, Highway Engineering Division, is responsible. This work is mainly aimed at improvements in the design, construction, maintenance and operation of the Provincial Highway System. Proposals for R&D work in other aspects of transportation will be referred to or handled by other Divisions or Branches of the Ministry as appropriate to the subject matter .

Note: Responsibility for "communications" was transferred to the Ministry of Culture and Communications in October 1987.

2/ Ontario Joint Transportation Research Programme (OJTRP)

The OJTRP (formerly the OJT & CRP, the "C" referring to Communications) is a long-established programme to carry out applied research and development work, principally at Ontario universities. In the 1987/88 financial year the funds allocated amounted to almost $400,000 covering 23 projects in nine Ontario universities or research establishments.

A problem to be investigated under the programme is likely to be one requiring a more basic approach or extension of known techniques and methodologies to new situations and be of a longer term nature. While most projects in past years have been concerned with the physical sciences or civil engineering related to highway aspects of transportation, there is no restriction on the disciplines that may contribute, other than the direct relevance of the work to the objectives of the programme.

2.1/ Objectives of the Programme

The first objective of the programme is to improve, through research and development studies, the planning, design, construction, maintenance, and operation of highways, and other transportation systems or facilities for which the Ministry is responsible.

A second objective is to stimulate interest in these activities within universities and amongst their teaching staff and graduate and undergraduate students, thus developing related skills and expertise upon which the Ministry and others can draw in future years.

Note: The programme is not directly applicable to studies at undergraduate level though undergraduates may be of assistance in executing part of the work.

2.2/ Programme Projects

The programme is project specific. A project is approved as part of the programme following receipt and evaluation of a research proposal(s), developed and submitted by a staff member (the investigator) and endorsed by the administration of the university or research establishment for whom he/she works.

The programme is for contract, not grant R&D work. An agreement is drawn up between the Ministry and the university for each project, preceded, where necessary, by a letter of intent.

The agreement commits the Ministry to the total project at the time of approval; funding, however, is on an annual basis.

3/ Consultant Assignments

The Ministry assigns R&D work to consultants having particular expertise in a subject identified as requiring investigation or study. The "consultant" having the expertise may be a research agency, private company, or individual. Projects assigned are usually for applied R&D work covering identified tasks.

3.1/ Consultant Projects

Consultant assignments are project specific.Proposals from consultants are evaluated and recommended to the Ministry's Consultant Assignment Committee for approval. Upon approval, an agreement is prepared and executed, preceded, where necessary, by a letter of intent.

4/ Administrative Procedures

Both the OJTRP and Consultant Assignments for R&D work follow similar procedures for the soliciting, submission and evaluation of proposals. The general conditions of contract (project agreements) and the general administration, technical monitoring and reporting of projects are also similar.

The general administration of external R&D work and the supervision of particular projects is in accordance with the requirements outlined below.

5/ Soliciting and Submission of Proposals

Proposals may be solicited or submitted at any time of the year. However, since the Ministry operates on a financial year of April 1 to March 31, the aim is to solicit, receive and evaluate as many proposals as possible during the first quarter of each calendar year so that work can start as soon as funds are to hand. It is important to note that in soliciting proposals, the Ministry offers no guarantee that one will be accepted.

5.1/ Research Needs Statements and Request for Proposal (Terms of Reference)

The Ministry identifies needed R&D work to universities or consultants in one of two ways.

(i) Each fall the R&D Branch, in consultation with its clients in the Ministry, identifies problems, often of a more basic and long term nature, which may be addressed under OJTRP. The resulting R&D Needs Statements are then distributed about the end of December to the Research Administrators at Ontario Universities and to other research agencies, consultants or others known to have, or to have expressed capability in the particular subject. Submissions in response to this general solicitation are due in mid-February in order that a final work plan against budget can be struck by April 1st.

An R&D Needs Statement endeavours to outline the problem to be investigated, the research objectives, the benefits sought and means of implementation, background resource material, and the person to contact in the Ministry for further information. The statement also gives an indication of the effort thought appropriate to addressing the problem by way of cost and duration. It is emphasized that these are not prime pre-determinants as to the acceptability of proposals

(ii) Throughout the year Requests for Proposals are issued to consultants for R&D work or associated professional services needed in support of approved R&D projects. These requests may cover the total project or a component of an overall project being undertaken in-house. Proposals are due by a given date and the time for preparation will depend on the complexity and urgency of the work. In these requests the work to be undertaken is likely to be closely defined with specific tasks, to be of a more applied nature than an OJTRP project and to have a specified completion date.

5.2/ Unsolicited Proposals

In addition to proposals solicited as above, the Ministry welcomes unsolicited proposals. These may be received at any time, but preferably by mid-February each year. These may be from an individual at a university (with the endorsement of the university research administration) or a consultant who, because of his/her own particular interests, knowledge, and experience, has identified a subject within the interests of the Ministry requiring investigation or study. Such unsolicited proposals will be evaluated as to appropriateness and considered for available funding in the same manner and priority as for solicited proposals.

5.3/ Preparation of Proposals

Before submitting either solicited or unsolicited proposals, the originator is urged to contact the appropriate technical person in the Ministry for any clarification of the Needs Statement or Request for Proposal, to talk over ideas, and to determine general suitability and any features that might be incorporated to make the investigation more meaningful for the resolution of the problem in mind. The appropriate person in the Ministry will have been identified in the request, or may otherwise be known personally to the investigator because of mutual interest and professional contacts. If not, the Director, R&D Branch should be contacted.

Before preparing a proposal, the originating investigator is urged to read the provisions of the long form of agreement (Appendix A to this guide) which will usually govern the execution of the project. Appendix B provides a short form of agreement used for certain limited scope, straightforward, usually short term projects, or requirements for professional/technical R&D services.

5.4/ Details Required in the Proposal Submission

The proposal is required to be a complete document in itself since, by reference in Schedule A of the Agreement to carry out the work, it becomes a part of the contract. Furthermore, one proposal is usually competing with another developed in response to the same R&D need and both seek the same project funds. Accordingly, it is usually not sufficient to only refer to the R&D Needs Statement or Request for Proposal, adding a few lines and outline estimated costs.

In particular, for OJTRP, the investigator should outline his/her approach to the problem and the path to a solution. This might include comments on the objectives and benefits sought, the present state of knowledge, alternative lines of investigation in techniques and methodologies available and justification for the one chosen, any phasing or related activities which may (or should) constrain progress or affect the proposed work schedule, and, of course, his/her qualifications, knowledge, and experience to undertake the work.

The following specific details are required:

(A) the general line of investigation proposed and the methods and procedures to be followed in the project as a whole or in each phase;

(B) the "best" starting date and the completion date together with a work schedule for the various phases of the project which identifies any interim completion dates;

(C) estimated costs (It is important to read Section 8.7 through 8.14 and 8.17 of this guide, at this point, to appreciate the basis of funding and financial control):

  (i) relevant to each phase (if appropriate) and in total;

  (ii) broken down on a financial year basis from April 1 to March 31; and

  (iii) the detailed make up of the TOTAL estimate as related to items of work proposed. Specifically identify the following cost items (which are essential to preparing Schedule A where the long form of agreement is used — See Sections 7 and 8 of this guide):

    (a) remuneration of staff (See Section 8.12 of this guide for important details that must be included in proposal);

(b) capital equipment costs;

(c) computer services, costs and basis of the rates (see Section 8.17);

(d) report preparation (lump sum);

(e) overheads (See Section 8.10 of this guide);

(D) location(s) where the project is to be carried out, including any visits planned to other research organizations, etc., essential to the project;

(E) the available facilities for carrying out the proposed work such as laboratories, major testing equipment, information resources, and the like;

(F) the investigator and principal staff, listing their particular qualification, expertise, experience and publications that are relevant;

(G) any part of the project that would be subcontracted, by item and name of the subcontractor;

(H) services or facilities to be furnished by the Ministry such as access to records and data on file, assistance with field work, use of Ministry equipment or computer services. (It is naturally the policy of the Ministry to co-operate in every way possible in these respects contingent upon resources being available and minimization of the interference with normal operations.);

(J) any special conditions or information pertinent to the proposal or project, if approved.

5.5/ Submission of Proposals

Proposals must be submitted in triplicate to arrive by the close of business on the due date.

They should be addressed as shown on the Research Needs Statement or Request for Proposals or otherwise to the Director, R&D Branch.

Proposals must be submitted under cover of the letterhead of the organization concerned and in case of those from an individual investigator at a university, research agency or with a consultant, the proposal or the covering letter must be signed or countersigned by a duly authorized official of the university, agency, or consultant.

Receipt of all proposals solicited or unsolicited, will be acknowledged and a likely date for acceptance/rejection indicated.

6/ Proposal Evaluation and Project Acceptance

Proposals received are evaluated by the Ministry as to completeness and likelihood of success in meeting the stated R&D objectives considering: the overall approach suggested for the investigation and the specific methods and procedures used; the staff, facilities and resources to be deployed; the time frame and; the estimated cost. This aspect of the evaluation is undertaken by a technical team calling upon expert advice as may be needed in order to recommend and justify between competing proposals for the same project. It should be emphasized that the evaluation recommendation is not based solely on the lowest cost estimate or meeting the indication of effort cost

shown on the Research Needs Statement. All other pertinent factors are weighed in. (Upon request, copies of the standardized evaluation criteria used will be made available but not the evaluations of specific proposals.)

Proposals solicited or unsolicited for OJTRP face an upper limit on total annual funding and this requires prioritization of new projects within the R&D budget considering carry-over funds required for continuing projects. Consultant assigned projects, in response to requests for proposals, usually relate to projects which have already been approved within the R&D budget for the financial year. However, should the estimated cost of proposals received exceed the sum allowed for in the original approval of the project, then, naturally, the consultant assignment is subject to a review as to whether the additional funds can be made available or whether the scope of the work must be modified.

In the case of new OJTRP projects submitted in the early part of the calendar year, the objective is to advise of acceptance early in April. Acceptance of consultant assigned projects is made known as soon as possible after the Ministry's Consultant Assignment Committee has considered the recommendation for acceptance. The Committee usually meets each week. Notification of acceptance is either by letter of agreement or letter of intent followed by a formal agreement. This may take a few weeks to execute.

Except in very special circumstances dictated by the nature of the project, the agreement is with the university/ consultant and not directly with the investigator/project manager involved.

7/ Types of Agreement

As appropriate, the Ministry uses two types of agreement for procurement of R&D services from universities/consultants covering both major long-term projects and shorter limited assignments.

7.1/ Long Form of Agreement

The long form of agreement is executed for all major external R&D projects under OJTRP or as consultant assignments. (A blank copy is found as Appendix A to this guide.)

7.2/ Short Form of Agreement

The short form of agreement is a letter setting out the general terms and conditions for provision of limited, straightforward professional/technical R&D services as defined by the Ministry or in a proposal submitted. The services to be provided are defined in an attached Schedule "A".

The letter is then countersigned by the party providing the services requested as accepting the stated terms and conditions. (A blank copy is found as Appendix B to this guide.)

8/ Long Form of Agreement — Indexed Commentary

While the short form of agreement is relatively straightforward and requires no further comment, the long form of agreement is more complicated in that it must cover many eventualities over a long period of time with significantly larger expenditures to be accounted for.

A blank copy of the standard long form of agreement is provided as Appendix A to this guide. Other than on the cover page and by interchanging the words "university" and "consultant" as necessary wherever they occur, all variations from one project to another are specified in Schedule A attached to, and forming part of, the agreement.

Schedule A is drafted by the Ministry on the basis of the details submitted in the proposal or subsequently negotiated.

The agreement is signed in execution by the authorized officials of both parties who also initial each sheet of Schedule A.

The following points are a commentary on some of the more important items in the long form of agreement which should be kept in mind when preparing proposals or while carrying out the project.

8.1/ Approvals Required in Writing from the Ministry

The agreement provides for subsequent variations, found necessary as the work proceeds, to be approved by the Ministry in writing. This authority is assigned to the Director, Research & Development Branch (Section 14). Some of the more important items requiring such approval are:

- Change in the scope of the project (Section 2 applies);
- Any significant changes related to project items in Schedule A (Sections 3, 5(1), 6(1b), 6(1d), 6(1e), 6(1g) apply);
- Travel outside Ontario or to locations not listed in Schedule A (Section 6(1h) applies;
- Changes in allocation of total or annual funds shown in Schedule A (Section 6(3a), 6(3b) and 6(3c) apply);
- Disclosure of data, etc. (Section 10(3) applies);
- Presentations, papers, and publications prior to completion of project and for six months thereafter (Section (12(4)e) applies);
- Assignment of work outside of that provided for in Schedule A (Section 15) applies).

Requests for such approvals should be directed in writing to the Director, R&D Branch, outlining the specific permission required and the supporting details.

8.2/ Technical Provisions

Details relating to the methods, procedures, facilities, staffing, and resources to be employed are to be found in Sections 1, 2, 3, and in Schedule A

Section 12(5) covers Canadian Metric System units of measurement.

Sections 10 and 11 relate to data and documents required for the project or generated during the project.

Section 13 relates to inventions and patents.

8.3/ Project Monitoring

For each project the Ministry names a "monitor" whose job it is to serve as the technical link between the investigator and the Ministry. The role of the monitor is to keep an eye on progress and the direction the project is taking, to provide technical input to best relate the project to Ministry needs, and to ensure that services, data or other co-operation to be furnished by the Ministry are available as and when required.

Usually, the monitor will be the person in the Ministry most knowledgeable in the subject area of the project.

The monitor is not directly concerned with administrative or financial approvals which are handled by the Director, R&D Branch, though he/she may help in an advisory or transmittal role.

8.4/ Timing, Completion, and Default

Section 5(1) and Schedule A, together with the work schedule in the proposal, cover the time frame for completion of the project. Sections 5(2) and (3) provide for action to be taken in default.

8.5/ Progress and Final Reports

Section 12(1) covers the requirement for submission of progress reports at quarterly intervals or at the end of each phase of the project (single copy).

A final report in the form specified in Section 12(3) is required at the end of the project by the completion date stated in Schedule A. This report is subject to review (Section 12(2)) and its acceptance by the Ministry formalizes the closing of the project and release of any holdback. As provided for in Section 6(5), a holdback of 10% on each invoice is applied pending receipt of an acceptable final report.

Note: All final reports are required to be in camera-ready form. (A copy of standard format required will be furnished on request.)

8.6/ Publication of Reports, etc.

Publication of the report or other information about the project is governed by Section 12(4). *It is emphasized that the Ministry places no restriction whatsoever on the publication of any material generated under OJTRP project agreements.* (There may be very occasional exceptions where limited confidentiality is expected to be needed for a period — for instance, in development of a process having commercial potential. If so, this special requirement will be stated in Schedule A). Temporary restrictions are, however, placed on the publication of material while the project is un-

derway, and for six months thereafter, to ensure that the material in question is scientifically accurate and justified in light of the ultimate findings of the project.

For certain consultant assignments for professional services or where the findings are intended as a partial contribution to an in-house R&D project, the question of separate publication of a report will not arise and Schedule A will so note.

Approval in writing from the Ministry is required for:

(a) Papers and articles to be presented or published during the period of temporary restrictions (duration of the project and six months thereafter).

(b) Travel (cost reimbursement) to present a paper on the project during the course of the project (Section 6 (1h)).

8.7/ Financial Provisions

Section 6 governs the applicable general financial arrangements. The details applicable to a particular project are stated in Schedule A under the following items:

(a) Project Staff and Rates of Remuneration (and Fringe Benefits)

(b) Capital, Special Equipment, or Services Authorized

(c) Computer Services Authorized

(d) Report Preparation

(e) Overheads

(f) Funds Allocated

Attention is drawn to the following:

8.8/ Funding and Financial Control

(a) Under "Funds Allocated", a total cost upset limit is established for the project and for a specific allocation of funds for each financial year (April 1 to March 31) (both shown in Schedule A).

(b) Changes in Funds Allocated require approval in writing from the Ministry based on revised estimates and reasons submitted by the university/consultant (Sections 6 (3a,b, and c)).

(c) "Financial Management" requires a co-operative effort between the Ministry and the university/consultant if the limited annual budget for external R&D work is to be used effectively. It is advantageous to both parties to move funds around between projects during the year to match progress or to permit a new line of the investigation that opens up to be followed and to establish estimated costs of carry-over work to the next financial year as soon as practical so that the allocation of funds to start new projects is not impeded.

It is particularly important at the end of each financial year that invoices be received on time so they can be paid from that year's funds and not become carry-overs to the exclusion of the corresponding value of new project work that might otherwise be started.

To achieve these measures of financial control:

(1) The university/consultant is asked to advise the Ministry at any time of the year, if it becomes apparent that costs will exceed or be less than the estimates by 10% or more (Section 6(3b)).

(2) In December of each year a full financial review is undertaken to ensure that progress and expenditures either match the estimate to the approaching year-end or to arrange any reallocation of funds between projects.

(3) By March 1 each year, investigators/project managers, universities/consultants are asked to submit estimates where work on a project is expected to run into the next F/Y either in confirmation of their original estimate or as a revision thereof (Section 6(3c)).

(4) Invoices for all work completed up to March 31 are to be submitted not later than the fifth working day of April (Section 6(3d)).

8.9/ Reimbursement and Audit

Reimbursement for costs incurred in accordance with Section 6 is normally by interim payments based on itemized invoices (Section 6(4)). A 10% holdback is applied to each interim payment pending receipt of an acceptable final report (Section 6(5)). Vouchers and supporting documents are not required with invoices but must be retained and made available for audit for three years after completion or termination of the project (Section 6(6)).

Recent audits have noted on several projects:

(1) inadequate itemization on invoices to justify the total reimbursement claimed;

(2) frequent failure to submit interim invoices promptly — not less often than quarterly is specified;

(3) poor record keeping as to time spent on a project and sparse supporting documentation.

Failures in the first two respects may delay payment due. Lack of retained documentation makes audits much more protracted and embarrassing to all concerned.

8.10/ Overheads

An amount for overheads is provided for in Section 6(2) to be calculated in accordance with the provisions of Schedule A.

Five approaches to determining overheads are currently in use, depending on the nature of the project and whether it is undertaken under OJTRP by a university or is a consultant assignment.

(a) No specific allowance for overheads. Overheads are included in appropriate items of the estimate. (This is a rarely used approach and is usually limited to small projects with an individual consultant who is working essentially without organization support.)

(b) Lump Sum. (Again, a rarely used approach and limited usually to a project where a fixed overhead is incurred which is independent of the amount of work performed.)

(c) Payroll Cost times a factor. (Used in some consultant assignments where the project is staff-intensive.)

(d) x percent of the amounts payable under Section 6(1). (Common form of overheads on OJTRP and consultant assigned projects.) The x% may vary from project to project and university/consultant to university/consultant to reflect the complexity and cost of the services and facilities used by the project. For example, a state-of-the-art report written in an office as compared with an experiment project using the facilities of a laboratory for much of the work). Different x% may be appropriate to certain items, e.g., travel where the university/consultant is not involved in an overhead for such disbursements. The commonly accepted overall value for "x" is 30% with 2% applied to travel items.

(e) A sliding scale as follows:

x% of the amounts payable under Section (6) (1) on the first $10,000 and x – 10% on the remainder of the total amount, except that the amounts payable for capital equipment under subsection b, for communications and shipping under subsection f, and for travelling expenses under subsection h shall attract an overhead of 10%. In determining the total amount of overhead payable at x% or x – 10%, the items attracting a 10% overhead rate shall first be deducted.

(The intent of the sliding scale is to more realistically reflect that overheads depend on the size of the project, that there is a front-end loading for general administration, and that capital equipment, communications, and travelling do not involve the university/consultant in overhead expenses for administrative and physical services to anything like the same extent. The sliding scale is mainly used for OJTRP projects: in particular for those of significant cost (over $50,000).

The project proposal should state the desired manner, percentage amount(s), factors or sums by which the overheads are to be determined. The matter will then be open to negotiation.

8.11/ Capital Equipment

Sections 7(1) and (2) note special requirements relating to capital equipment which becomes and remains the property of the university/consultant after dedication to the project.

8.12/ Project Staff — Rates of Remuneration

For OJTRP projects at universities, it is convenient and customary to relate faculty staff remuneration to their university salary, to pay the going university rate for graduate students, research assistants, technicians, and others engaged on the project.

For these projects the following provisions are included in Schedule A:

Salaries or wages of persons directly engaged on the project calculated on the following basis and to include required fringe benefits:

(i) University staff for the time spent exclusively on the project calculated at a daily rate equivalent to one two-hundred and twenty-fifth (1/225) of the individual's annual salary paid by the university in respect of normal teaching duties.

(ii) Graduate assistants assigned to the project in partial fulfillment of the university's requirements for a Master's or Doctorate degree or research assistants for time spent on the project calculated at the current daily rate for such persons at the university.

(iii) Technicians, machinists, labourers, and others necessarily engaged on the project for time spent exclusively on the project calculated at current rates for such employees at the university.

Note: "Current rates" covering (ii) & (iii) must be stated in the proposal.

For Consultant Assigned projects and OJTRP projects not at universities the project staff, positions, and corresponding rate of remuneration are individually listed in Schedule A. Accordingly, the project proposal must include these details and, wherever possible, the rates proposed should be geared to some recognized daily or hourly scale. For example, in the case of consulting engineers, that agreed between the Ministry and the Consulting Engineers of Ontario based on APEO suggested rates. It is recognized that because of the highly specialized knowledge and capability required in R&D work such standard rates may be exceeded in the case of certain specialists and principals working on the project.

Note that the rates used in OJTRP type agreements include fringe benefits. In consultant assignment type agreements, fringe benefits may be included in the individual rates or they may be separately identified as an actual cost.

8.13/ Report Preparation

Report preparation is covered by provision of an upper limit lump sum (Section 6 (1)g) to include all associated typing, word processing, and drafting services to produce the final manuscript in the form required in Section 12.

8.14/ Lump Sum Contracts

While reimbursement for staff on a time basis is usually the most appropriate method for R&D projects, since the precise course and extent of the investigation cannot usually be defined exactly beforehand, there may be occasions where an exact estimate can be made related to particular items or phases of work. In such cases, Section 6(1) of the long form of agreement would govern reimbursement for the agreed fixed costs specified in Schedule A.

8.15/ Disclaimer (of Liability)

Legal responsibility for consequences arising from applying the findings of a project is covered by a simple disclaimer clause printed in all copies of final reports on each project. This clause (Section 12(6) reads as follows: "This report is published without prejudice as to the application of the findings."

8.16/ Canadian Metric System Units of Measurement

Section 12(5) states the units of measurement to be displayed in final reports. The measurement

system used during the course of the work is left to the choice of investigator but the Ministry encourages use of the Canadian Metric System wherever practical.

8.17/ Computer Usage

The agreement recognizes that two different circumstances apply these days to using computers. Firstly, a real and identifiable cost may be incurred to the project. Or, an available computer, already used for other day-to-day purposes, may be used at little or no direct cost.

Section 6(1)e governs payment for computer services charged back by an in-house computer centre or purchased from an outside agency. On the other hand, the use of micro- or mini-computers (hardware and software) already existing in an office or laboratory working on the project, or which are temporarily on loan from elsewhere in the organization, is considered to fall under the exclusions of Section 6 (1)b and d and not to attract separate payment.

New computing equipment (including system programs) required for the project is regarded as capital equipment governed by Section 6 (1)b. New application software required for use on the project, on either new or exisiting computers, and consumables, fall within chargeable costs for materials, supplies, etc. under Section 6 (1)c.

In these lights, computer services or computing capital equipment which are to be paid for by the Ministry under Section 6 (1)e or b, respectively, are identified in Schedule "A" or must be subsequently approved by the Ministry in writing.

Where the Ministry is to provide access to data or processing through its own computing facilities, then this is detailed under "Services or other items to be provided by the Ministry" in Schedule "A" and is at no cost except for those of telecommunications (Section 6 (1)f) if used.

Original computer programs developed during the course of the work fall within the definition of "subject data" (Section 11). Where a computer program is a deliverable product of the project, this is identified under "Special Conditions" in Schedule "A".

9/ Policy on Payment of Accounts

General government policy is to pay accounts within 30 days. This period is calculated from the date of receipt of valid and fully supported invoices to the date of cheque issuance. "Valid and fully supported" means the relevant goods or services have been received and conform with the contractual agreement. Where the 30-day period is exceeded, the policy is then to pay interest on the outstanding account upon request.

10/ Performance Appraisal

Upon completion of each project, a performance appraisal is made as to the manner in which the project was carried out, its success in meeting the stated objective (or reasons justifying why this was not possible), the completeness and applicability of the findings, the attaining of cost and time

targets, and other relevant factors. This appraisal is held confidentially on file as a future aid in judging proposals for related or follow-up work in the same area or of the investigator/consultant in connection with other proposals he/she may submit.

11/ Administration and Further Information

Matters related to project approvals, funding, contracts, and questions related to general administration, submission of accounts, or other clarification on OJTRP and Consultant Assigned R&D should be addressed to:

The Research Administrative Secretary
R&D Branch
Ontario Ministry of Transportation
3rd Floor, Central Building
1201 Wilson Avenue
Downsview, Ontario
Canada M3M 1J8
Phone: (416) 235-4744

Appendix A/
Memorandum of Agreement (Long Form)

Note: The Memorandum of Agreement presented in this appendix is worded to suit agreements with universities. The same wording is used for agreements with consultants except that "Consultant" is substituted for "University" where appropriate.

Example Memorandum of Agreement (Long Form)

MEMORANDUM OF AGREEMENT dated the ___ day of ____ A.D. 19__.

BETWEEN:

HER MAJESTY THE QUEEN in right of the Province of Ontario, as represented by the Ministry of Transportation, the Province of Ontario,

hereinafter called the "Ministry"

OF THE FIRST PART

-and-

_____

hereinafter called the "University"

OF THE SECOND PART

WHEREAS the Ministry wishes a Research and Development study to be made, titled,

_____,

hereinafter called the "Project"

And whereas it has requested the University to carry out the project in connection therewith; under the Ontario Joint Transportation Research Programme;

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the premises and the mutual benefits and obligations herein the parties hereto agree as follows:

1. The University shall use the best available methods in carrying out the work and, except as otherwise provided herein, shall provide all personnel, services, materials, equipment, and facilities required to carry out the project described in Schedule A attached hereto and forming part of this Agreement.

2. The project shall be conducted in accordance with the specifications in Schedule A and no change in the scope of the project shall be made without the prior consent in writing of the Ministry.

3. The execution and completion of the project shall be the direct responsibility of the investigator or project manager named by the University in Schedule A and the University shall specifically assign to the project the staff listed in Schedule A in the capacity and at the rates of remuneration shown for each. No change of listed senior staff or rate of remuneration shall be made without the prior consent in writing of the Ministry.

4. The Ministry shall name one of its staff in Schedule A who shall be responsible for the liaison between the Ministry and the University concerning the project.

5. (l) The University shall complete the project by the date set out in Schedule A at which time the final report as specified in Section 12 shall be submitted to the Ministry unless this date is extended to such later date as the Ministry may approve in writing.

(2) The Ministry may suspend or terminate the whole or any part of the Project upon 30 days notice in writing for failure by the University to diligently proceed with the project in reasonable compliance with the specification in Schedule A or for any other cause or causes.

(3) Upon such notice having been given the University shall take immediate action to cancel all outstanding commitments relating to the Project and the Ministry shall only be liable for actual costs, as calculated from Section 6 and Schedule A, incurred by the University up to the termination date.

6. (1) The Ministry shall reimburse the University for costs incurred in carrying out the project in accordance with the following:

(a) Salaries or wages of persons engaged on the project calculated in accordance with the rates provided for in Schedule A.

(b) The cost of capital or special equipment purchased or rented as provided for in Schedule A or subsequently approved by the Ministry but excluding charges for the use of general facilities, laboratory and other equipment of the University.

(c) The cost of materials, supplies and fabrications incidental to the project.

(d) The cost of services incidental to the project such as testing and processing but excluding the purchase or rental of such services where these are performed by the staff of the University assigned to the project using the general facilities, laboratory and other equipment or facilities of the University unless identified in Schedule A or approved by the Ministry in writing.

(e) The cost of computer services provided for in Schedule A or subsequently approved by the Ministry in writing.

(f) The costs of reasonable long distance telecommunications, postage and shipping charges incidental to the project.

(g) The cost of preparation and reproduction of graphic and printed material required for the final or interim reports but not to exceed the lump sum specified in Schedule A unless otherwise approved by the Ministry in writing.

(h) Reasonable travelling expenses necessarily incurred in performance of the Project and calculated at the rates, and for the items, applicable to Ministry staff, provided that the prior approval of the Ministry in writing has been obtained for any travel to locations not specifically identified in Schedule A as being locations where the project is to be carried out or which lie outside the Province.

(i) A lump sum for any fixed cost item or items as specified in Schedule A.

(2) In addition to the amounts payable under Section 6 (1) the Ministry shall pay to the University a sum for overhead calculated in accordance with Schedule A.

(3) (a) The total or annual cost of the Project shall not exceed the funds allocated in Schedule A unless approval has been given by the Ministry in writing.

(b) If at any time the University has reason to believe that the cost of the project to the Ministry, either in total or on an annual basis, will exceed or be less than 10% or more of the amount provided for in Schedule A or otherwise approved in writing by the Ministry, the University shall immediately notify the Ministry in writing to this effect, stating the reason therefore and providing a revised estimate of the costs.

(c) The University shall furnish in writing to the Ministry, not later than the lst day of

March, an estimate of the cost of continuing the project during the year starting April 1st, where a project is scheduled to carry over to the following financial year. The Ministry shall then approve in writing an allocation of funds for this carryover work as the parties hereto agree and subject to funds being appropriated by the Legislature.

(d) The University shall submit invoices as required by this Agreement and in a form acceptable to the Ministry for all work completed up to the 31st day of March each year not later than the fifth working day of April of the same calendar year.

(4) The Ministry shall reimburse the University for costs incurred in carrying out the Project in accordance with Section 6 by interim payments based on invoices submitted in a form acceptable to the Ministry, not more frequently than the end of each month and not less frequently than each quarter, itemizing the staff by name and associated time or travel expenses, together with equipment, materials, services, and overheads as the case may be.

(5) During the project a hold back of 10% shall be applied to each interim payment made as specified in Section 6 (4). The hold back will be released upon receipt of an acceptable final report of the project as required under Section 12.

(6) The University shall not submit vouchers and substantiating documents with invoices for interim or final payments but shall retain them and make them available for audit by the Ministry at all reasonable times during the continuance of the Project and for 3 years after completion or termination of the Project.

7. (1) In this Agreement "Capital Equipment" means any article or assembly or equipment purchased or fabricated for use in the Project which is normally classified as a capital asset.

(2) Unless otherwise provided for in Schedule A, all capital equipment shall become and remain the property of the University but shall be applied solely to the execution of the Project, as and when required until its completion.

8. The University shall make prior disclosure to the Ministry of any intention to use funds, other than reimbursements arising from this Agreement, in support of the Project specified in Schedule A. Such a disclosure shall state the source and amount of the funds in question and the particular aspects of the Project to which it is intended they shall be applied.

9. The Ministry, or persons authorized by the Ministry, shall have the right at all reasonable times, to inspect or otherwise review the work performed under the Project and the premises in which it is being performed.

10. (1) The Ministry will furnish the University with those services and items listed in Schedule A together with such additional assistance as the parties hereto agree as being of mutual benefit for carrying out the Project.

(2) All charts, data, reports and documents, and other items furnished to the University by the Ministry shall remain the property of the Ministry and shall be returned to the Ministry upon completion of the Project.

(3) The University shall not disclose the contents of charts, data, reports or documents furnished by the Ministry, to anyone other than staff assigned to the project, without first obtaining the approval of the Ministry in writing.

11. (1) In this clause "subject data" means and includes all data, written material, photographs, drawings, computer programs and other information collected or created under the Project, whether delivered to the Ministry or not, but does not mean or include financial records, accounting records, and other information incidental to the administration of this Agreement.

(2) The University shall retain all subject data during the continuance of the Project and thereafter for a period of 3 years.

(3) Subject data shall be available for study and use by the Ministry so long as the subject data are in the possession of the University.

(4) The University shall not disclose subject data to any third party prior to acceptance and publication of final or interim reports of the project as provided for in Section 12.

12. (1) The University shall submit to the Ministry

(a) Progress reports at the end of each quarter calendar year; or if more appropriate

(b) Interim reports at the conclusion of each phase of the Project; and

(c) Unless otherwise provided for in Schedule A, upon completion of the Project a final report suitable for publication containing a concise statement of the findings and conclusions arising out of the Project, together with descriptions of the procedures and supporting data appropriate thereto.

(2) The Ministry shall review the final report submitted under subparagraph 1, and if necessary, negotiate with the University any changes which may be deemed desirable in the interest of clarity, completeness, or consistency.

(3) Unless otherwise agreed to by the Ministry in writing, final reports shall be provided to the Ministry in the following form:

(a) Camera-ready copy suitable for publication to a standard acceptable to the Ministry.

(b) A disc copy is also required in a standard disc format such as AES, MS-DOS, MacIntosh, Wang, or NBI. Other formats may be acceptable if cleared beforehand with the Editor, Technical Publications, Research and Development Branch.

(4) Unless otherwise provided for in Schedule A.

(a) The Ministry shall then publish the final report in the Ministry of Transportation Research and Development Report Series and distribute copies to the appropriate organizations and individuals giving full consideration to recipients suggested by the University and project staff.

(b) The University may, following the publication and distribution by the Ministry of the final report under subparagraph 4 (a), reproduce the final report for its own purposes.

(c) The Ministry may from time to time publish reports on the progress of the Project including substantive information contained in the progress or interim reports submitted under subparagraph 1.

(d) Either party hereto, in consultation with the other may, after the final report has been submitted by the University and accepted by the Ministry or six months after the report has been submitted, whichever event shall first occur, prepare articles for publication in the commercial press or the journals of professional societies, or papers for presentation at conferences or conventions which deal with either the whole project or with significant parts or the methods, procedures, or results thereof.

(e) The University shall not, before the final report has been submitted to and accepted by the Ministry, or six months after the final report has been submitted, whichever event shall first occur, prepare any articles or papers based on the Project except with the prior approval in writing of the Ministry. Nothing contained herein shall prevent the

submission of a thesis, containing information obtained as a result of work under this Project, by a graduate student to a thesis committee, or the incorporation of such information by a student into an unpublished class assignment.

(f) All reports, articles, and papers prepared by the Ministry or the University shall give prominent recognition to the joint nature of the Project, the University and the individuals involved in the Project and in the writing of the Report, but all such reports, articles and papers shall, 30 days before publication, be submitted by the author to the other party to this Agreement and if the other party so requests it, the other party shall not be mentioned in any way in the reports, articles or papers.

(5) (a) All units of measurement in the final report shall be expressed in the Canadian Metric System exclusively unless otherwise approved by the Ministry or specified in Schedule A. Canadian Metric System units and usage shall be in accordance with Metric Practice Guide, National Standard of Canada, CAN3-Z234.1 current at the time of reporting.

(b) Where approved by the Ministry or specified in Schedule A that units of measurement in the final report are to be expressed in both the inch/pound system and in the Canadian Metric System, they shall be displayed in the following manner:

source unit followed by equivalent in parentheses ( ),

for example: 25 mm (1 inch)

1 inch (25 mm),

depending on which is the source unit.

(6) The Ministry or the University, when publishing the final report of the Project, shall include the following statement on one of the inside covers of each copy of the Report printed — "This report is published without prejudice as to the application of the findings".

13. (1) The University shall make a prompt written disclosure to the Ministry of any patentable invention, improvement or discovery conceived or first actually reduced to practice in the performance of the Project and shall submit separately or as part of the final report on the Project a complete list of all such inventions, improvements, and discoveries including those previously disclosed.

(2) Any patentable rights or other rights in any invention, improvement, or discovery conceived or actually reduced to practice in the performance of the Project shall be the property of the Ministry unless otherwise provided for in Schedule A.

(3) When provided in Schedule A that any patentable rights or other rights in any invention, improvement or discovery conceived or actually reduced to practice in performance of the Project shall be the property of the University, then the University shall grant the Ministry or its nominee an irrevocable, non-exclusive, royalty-free licence to practice or cause to be practiced such rights for the purposes of the Government of Ontario, its Agencies and Municipal Governments in Ontario.

14. Wherein this Agreement the consent or approval of the Ministry is required, such consent or approval may be given by the Director, Research and Development Branch, of the Ministry of Transportation.

15. This Agreement shall not be assigned in whole or in part, except as provided for in Schedule A, without the prior consent in writing of the Ministry.

IN WITNESS WHEREOF the Director, Research and Development Branch, Ministry of Transportation of Ontario, on behalf of the party of the First Part has hereunto set his hand and the party of the Second Part has affixed its Corporate Seal attested by the hands of its proper officers duly authorized in that behalf.

Witness: _____) MINISTRY OF TRANSPORTATION

) (ONTARIO)

) Per:

) Director, Research and

) Development Branch

Witness: _____) Per:

_____ _____) Per:

SCHEDULE A

PROJECT SPECIFICATION

(NOTE: Deviation from any item herein requires approval of the Ministry in writing.)

Project Number: _____

Project Title: _____

Ministry staff member responsible for liaison: _____

Investigator or Project Manager responsible for Project:

Name & Title: _____

University: _____

Authorized Subcontractor(s): _____

Project Staff and Rate of Remuneration: _____

_____

_____

_____

_____

_____

_____

_____

Capital, Special Equipment or Services Authorized: _____

_____

_____

Computer Services Authorized: _____

Report Preparation: _____

Overhead: _____

Estimated Total Project Cost: _____

Initialled:

For the Ministry:

For the University:

Methods, Procedures and Schedule to be followed: _____

_____

_____

_____

_____

Location(s) where the Project is to be carried out: _____

_____

_____

_____

_____

Funds Allocated:

The total amount payable by the Ministry under this agreement (a) shall not exceed $_____.00 and (b) shall not exceed $_____.00 by the 31st day of March, 1988, and (c) during succeeding annual periods, if any, from the 1st day of April to the 31st day of March in the following year, up to and including the annual period in which the completion date stated in this Schedule A falls, shall be such sums as the parties hereto agree upon, subject to funds being appropriated by the Legislature.

Completion date: _____

(Date for submission of Final Report)

Services or other items to be provided by the Ministry: _____

_____

_____

Special Conditions: _____

_____

And all otherwise in accordance with:

The proposal "_____"

dated _____ submitted by _____.

Initialled:

For the Ministry:

For the University:

Appendix B/
Executive Director's Letter of Agreement (Short Form)

Example Executive Director's Letter of Agreement (Short Form)

Ontario

Ministry
of
Transportation

Research and Development Branch
1201 Wilson Avenue
Downsview, Ontario
Canada M3M 1J8

__ _____, 198_.

RE: R&D Project No.: _____

Entitled: _____

Agreement No. ____ -____-___

Dear _____;

This letter will serve to confirm that the Ministry requests you to provide professional/ technical research and development services (the services) for the above-noted R&D project, as further defined in Schedule "A" attached. The completion date for the services shall be __, _____, 198_.

The total amount payable for the services shall not exceed $_____.00 and payments for the fiscal year ending 31st March, 198_, shall not exceed $_____.00.

You are required to submit itemized invoices at the end of each calendar month detailing the portion of the services performed in that month. Vouchers and receipts in support of the items invoiced need not be submitted but shall be retained for a period of three years after completion of the services and be made available for audit by the Ministry upon request. Unless otherwise stated, reimbursement for travel and living expenses shall be for the items and at the rates currently applicable to Ministry staff. Each invoice submitted for interim payment shall provide for a 10% holdback pending completion and acceptance of the services. The final invoice shall include all monies held back. Acceptance shall be signified by approval of the final invoice for payment.

The Ministry reserves the right to terminate the agreement if your performance falls below acceptable standards or if the Legislature fails to appropriate funds for its continuance. In the event of termination, the Ministry shall be responsible only for the cost of the services performed prior to the date of cancellation and for costs which you incur as a result of the termination, as long as these are reasonable.

The Ministry staff member responsible for technical matters related to the project is _____ _____. He/she can be contacted at the letterhead address or by telephone at (416) 235-____. All invoices and other administrative matters should be addressed to The Research Administrative

...2/

Secretary, R&D Branch at the letterhead address. The R&D Project Number and this Agreement Number should be shown on all invoices and correspondence.

Any change in the terms and conditions of this letter of agreement, including the details and special conditions in Schedule A, requires prior written approval from the Director, R&D Branch on behalf of the Ministry.

If you agree with the terms and conditions of the agreement, please sign the original and second copy of this letter and place your initials in the designated spot on Schedule "A" and return to The Research Administrative Secretary, R&D Branch. The third copy of this letter of agreement is for your records.

Yours truly,

Executive Director

Highway Engineering Division

Accepted by:_____

Date:_____

Schedule "A"

Attachment to Agreement No.: _____

for R&D Project No.: ____-____-___

Details of Services to be provided: _____

_____

_____

_____

_____

_____

_____

_____

Special Conditions, including any services to be provided by the Ministry: _____

_____

_____

_____

_____

_____

_____

_____

Initialled:

For the Ministry: _____

For the University: _____